IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Dureseti Chidambarrao, et al.

Group Art Unit: Unknown

Serial No.: Not assigned yet

Examiner: unknown

Filed: Concurrently herewith

For: IMPROVED NFETs USING GATE INDUCED STRESS MODULATION

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. 1.56

Sir:

Under provisions of 37 C.F.R. 1.97 through 1.99 and pursuant to applicant's duty of disclosure under 37 C.F.R. 1.56, applicants respectfully bring the documents listed on the attached Form PTO-1449 to the attention of the Examiner in charge of the above-identified application.

This citation does not constitute an admission that the cited references are relevant or material to the claims nor should it be construed as a representation that no other art than that identified exists. They are merely cited as constituting related art of which the applicant is aware.

DOCKET NO. FIS9-2003-0186-US1

It is respectfully requested that these documents be considered by the Examiner and formally made of record in this application.

Respectfully submitted,

Andrew M. Calderon

Reg. No. 38,093

Telephone: (703)712-5426

McGuireWoods LLP 1750 Tysons Boulevard, Suite 1800 McLean, VA 22102 (703)712-5000

SERIAL NO. ATTY. DOCKET NO. FORM PTO-1449 (Modified) FIS920030186US1 Unassigned LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT: APPLICANT'S INFORMATION DISCLOSURE Dureseti Chidambarrao, et al. **STATEMENT** GROUP: FILING DATE: (Use several sheets if necessary) Unassigned Concurrently Herewith REFERENCE DESIGNATION U.S. PATENT DOCUMENTS **DOCUMENT** FILING DATE **EXAMINER SUBCLASS** (IF APPRO.) **INITIALS** NUMBER DATE NAME **CLASS** 6,228,694 B1 5/8/2001 Doyle et al. 6,406,973 B1 6/18/2002 Lee 8/28/2001 Doyle et al. 6,281,532 B1 5,683,934 11/4/97 Candelaria 6,368,931 B1 4/9/2002 Kuhn, et al. 5,310,446 5/10/94 Konishi et al. 4,853,076 8/1/89 Tsaur et al. US 2002/0090791 A1 7/11/2002 Doyle et al. US 2002/0074598 A1 6/20/2002 Doyle et al. 6,509,618 B2 7/21/2003 Jan et al. Shimizu et al. 6,476,462 B2 11/5/2002 3/26/2002 6,362,082 B1 Doyle et al. 6,228,694 B1 5/8/2001 Doyle et al. 5,565,697 10/15/96 Asakawa et al. US 2003/0040158 A1 2/27/2003 Saitoh US 2002/0086472 A1 7/4/2002 Roberds et al. 6,521,964 B1 2/18/2003 Jan et al. 6,506,652 01/14/03 Jan, et al. FOREIGN PATENT DOCUMENTS TRANSLATION **DOCUMENT** SUBCLASS NUMBER DATE COUNTRY **CLASS** YES NO OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.) EXAMINER DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if

not in conformance and not considered. Include copy of this form with next communication to applicant.

PUBLICATION DISCI SSATY) ION UMENT MBER 31,513 02,841 31,740 31,369 01,121 98,358 93,497 03,975 61,885	LOSURE	ATTY. DOCKET NO. FIS920030186US1 APPLICANT: Dureseti Chidambarrace FILING DATE: Concurrently Herewith ATENT DOCUMENTS NAME Jackson, et al. McGroddy Bosco, et al. Ozkan, et al. Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al. Chou	o, et al.	SERIAL NO. Unassigned GROUP: Unassigned SUBCLASS	FILING (IF API	
ATION DISCI ssary) ION UMENT MBER 81,513 02,841 81,740 81,369 01,121 98,358 93,497 03,975 61,885	DATE 1/14/1992 8/31/1971 3/11/2003 3/11/2003 12/31/2002 12/24/2002 12/10/2002 6/11/2002	Dureseti Chidambarrao FILING DATE: Concurrently Herewith ATENT DOCUMENTS NAME Jackson, et al. McGroddy Bosco, et al. Ozkan, et al. Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al.		Unassigned		
MENT MBER 81,513 02,841 81,740 81,369 01,121 98,358 93,497 03,975 61,885	DATE 1/14/1992 8/31/1971 3/11/2003 3/11/2003 12/31/2002 12/24/2002 12/10/2002 6/11/2002	NAME Jackson, et al. McGroddy Bosco, et al. Ozkan, et al. Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al.		Unassigned		
UMENT MBER 31,513)2,841 31,740 31,369)01,121 98,358 93,497 03,975 61,885	DATE 1/14/1992 8/31/1971 3/11/2003 3/11/2003 12/31/2002 12/24/2002 12/10/2002 6/11/2002	NAME Jackson, et al. McGroddy Bosco, et al. Ozkan, et al. Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al.	CLASS	SUBCLASS		
MBER 31,513 02,841 31,740 31,369 01,121 98,358 93,497 03,975 61,885	1/14/1992 8/31/1971 3/11/2003 3/11/2003 12/31/2002 12/24/2002 12/10/2002 6/11/2002	Jackson, et al. McGroddy Bosco, et al. Ozkan, et al. Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al.	CLASS	SUBCLASS		
31,513)2,841 31,740 31,369)1,121 98,358 93,497 03,975 61,885	8/31/1971 3/11/2003 3/11/2003 12/31/2002 12/24/2002 12/10/2002 6/11/2002	McGroddy Bosco, et al. Ozkan, et al. Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al.				
31,740 31,369 01,121 98,358 93,497 03,975 61,885	3/11/2003 3/11/2003 12/31/2002 12/24/2002 12/10/2002 6/11/2002	Bosco, et al. Ozkan, et al. Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al.				
31,369 01,121 98,358 93,497 03,975 61,885	3/11/2003 12/31/2002 12/24/2002 12/10/2002 6/11/2002	Ozkan, et al. Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al.				
98,358 93,497 03,975 61,885	12/31/2002 12/24/2002 12/10/2002 6/11/2002	Yu, et al. Lach, et al. Ramdani, et al. Brunner, et al.				
98,358 93,497 03,975 61,885	12/24/2002 12/10/2002 6/11/2002	Lach, et al. Ramdani, et al. Brunner, et al.				
93,497 03,975 61,885	12/10/2002 6/11/2002	Ramdani, et al. Brunner, et al.				
03,975	6/11/2002	Brunner, et al.				
61,885		-				
	3/26/2002	Chau				
		Chou				··
55,169	7/3/2001	Li, et al.				
46,095	6/12/2001	Brady, et al.				
65,383	12/26/2000	Chou				
33,071	10/17/2000	Nagai				
46,464	4/4/2000	Schetzina				
25,280	2/15/2000	Brady, et al.				
	FOREIGN	N PATENT DOCUMENTS	\$			
UMENT MBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSL	ATION NO
					125	
OTHER	ART (Including	Author, Title, Date, Pertii	nent Pages, et	c.)		
				·		
EXAMINER			RED			
	UMENT MBER OTHER	FOREIGN UMENT MBER DATE OTHER ART (Including	FOREIGN PATENT DOCUMENTS UMENT MBER DATE COUNTRY OTHER ART (Including Author, Title, Date, Pertinent Country) DATE CONSIDER erence considered, whether or not citation is in conformance	FOREIGN PATENT DOCUMENTS UMENT DATE COUNTRY CLASS OTHER ART (Including Author, Title, Date, Pertinent Pages, et	FOREIGN PATENT DOCUMENTS UMENT DATE COUNTRY CLASS SUBCLASS OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.) DATE CONSIDERED	FOREIGN PATENT DOCUMENTS UMENT DATE COUNTRY CLASS SUBCLASS YES OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.) DATE CONSIDERED erence considered, whether or not citation is in conformance with MPEP 609. Draw line through of the constant of the conformance with MPEP 609.

FORM PTO-144	` ,		ATTY. DOCKET NO. SERIAL NO. Unassigned							
•	NTS AND PUBLICA INFORMATION DIS		APPLICANT: Dureseti Chidambarra							
(Use several she	ets if necessary)		FILING DATE: Concurrently Herewith	FILING DATE: Concurrently Herewith						
REFERENCE DE	ESIGNATION	U.S. PA	ATENT DOCUMENTS							
EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS		G DATE PPRO.)			
	5,940,736	8/17/1999	Brady, et al.							
	5,880,040	3/9/1999	Sun, et al.							
	5,861,651	1/19/1999	Brasen, et al.							
	5,679,965	10/21/1997	Schetzina							
	5,670,798	9/23/1997	Schetzina							
	5,561,302	10/1/1996	Candelaria							
	5,471,948	12/5/1995	Burroughes, et al.							
	5,459,346	10/17/1995	Asakawa, et al.							
	5,391,510	2/21/1995	Hsu, et al.							
	5,371,399	12/6/1994	Burroughes, et al.							
	5,108,843	4/28/1992	Ohtaka, et al.							
	5,060,030	10/22/1991	Hoke							
	4,958,213	9/18/1990	Eklund, et al.							
	4,665,415	5/12/1987	Esaki, et al.							
		FOREIGN	PATENT DOCUMENTS	<u> </u>		1				
	DOCUMENT					TRANSI	ATION			
	NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	YES	NO			
		1								
* * · · · · · · · · · · · · · · · · · ·	OTHE	R ART (Including	Author, Title, Date, Pertin	ient Pages, et	c.)					
EXAMINER			DATE CONSIDER	RED						

FORM PTO-14	,		ATTY. DOCKET NO FIS920030186US1	ATTY. DOCKET NO. SERIAL NO. Unassigned					
	NTS AND PUBLICA		APPLICANT: Dureseti Chidambarra						
(Use several she	eets if necessary)		FILING DATE: Concurrently Herewith	FILING DATE: GROUP: Unassigned					
REFERENCE DI	ESIGNATION	U.S. P.	ATENT DOCUMENTS						
EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	CLASS SUBCLAS		G DATE PPRO.)		
	5,989,978	11/23/1999	Peidous						
	6,284,626	9/4/2001	Kim						
	6,274,444	8/14/2001	Wang						
	6,261,964	7/17/2001	Wu, et al.						
	6,221,735	4/24/2001	Manley, et al.						
	6,117,722	9/12/2000	Wuu, et al.						
	6,107,143	8/22/2000	Park, et al.						
	6,090,684	7/18/2000	Ishitsuka, et al.			.,,			
	6,066,545	5/23/2000	Doshi, et al.						
	6,008,126	12/28/1999	Leedy						
	5,946,559	8/31/1999	Leedy						
	5,840,593	11/24/1998	Leedy						
	5,592,018	1/7/1997	Leedy				_		
	5,592,007	1/7/1997	Leedy						
	5,571,741	11/5/1996	Leedy						
		FOREIGN	PATENT DOCUMENTS						
	DOCUMENT					TRANSLATIO			
	NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	YES	NO		
	ОТНЕ	R ART (Including	Author, Title, Date, Pertin	ent Pages etc	.)				
				- ages, etc	···)				
				 					
XAMINER			DATE CONSIDER	ED					
XAMINER: Inition to the conformance of the conforma	tial if reference considered.	lered, whether or no Include copy of th	ot citation is in conformance is form with next communic	with MPEP (509. Draw line cant.	through o	itation i		

						7.55					
FORM PTO-14	449 (Modified)	,	ATTY. DOCKET NO. FIS920030186US1		SERIAL NO. Unassigned						
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT				APPLICANT: Dureseti Chidambarrao, et al.							
(Use several sheets if necessary)				FILING DATE: GROUP: Unassigned							
REFERENCE D	ESIGNATION	U.S.	PATE	NT DOCUMENTS							
EXAMINER INITIALS	DOCUMENT NUMBER DATE			NAME	CLASS	SUBCLASS	FILING DATE (IF APPRO.)				
	5,557,122	5,557,122 9/17/1996									
	5,354,695	10/11/1994		Leedy							
-	5,134,085	7/28/1992		Gilgen, et al.							
	5,006,913 4/9/1991 Sugahara, et al. 4,952,524 8/28/1990 Lee, et al.										
	4,855,245	8/8/1989		Neppl, et al.							
		FOREIG	GN PA	FENT DOCUMENTS							
	DOCUMENT		TRANSLAT								
	NUMBER	DATE		COUNTRY	CLASS	SUBCLASS	YES	NO			
				or, Title, Date, Pertinen		•					
Kern Rim, et al., "Transconductance Enhancement in Deep Submicron Strained-Si n-MOSFETs",											
	International Electron Devices Meeting, 26, 8, 1, IEEE, September 1998. Kern Rim, et al., "Characteristics and Device Design of Sub-100 nm Strained Si N- and PMOSFETs",										
	1 2002 Symposium On VLSI Technology Digest of Technical Papers, IEEE, pp 98-99.										
	Gregory Scott, et al., "NMOS Drive Current Reduction Caused by Transistor Layout and Trench Isolation Induced Stress", International Electron Devices Meeting, 34.4.1, IEEE, September 1999.										
	F. Ootsuka, et al., "A Highly Dense, High-Performance 130nm node CMOS Technology for Large Scale System-on-a-Chip Application", International Electron Devices Meeting, 23.5.1, IEEE, April 2000.										
	Shinya Ito, et al., Transistor Design	"Mechanical St	ress E	ffect of Etch-Stop Nitride	e and its Ir	npact on Deep	Submic	ron			
	Transistor Design", International Electron Devices Meeting, 10.7.1, IEEE, April 2000. A. Shimizu, et al., "Local Mechanical-Stress Control (LMC): A New Technique for CMOS-Performance Enhancement", International Electron Devices Meeting, IEEE, March 2001.										
	K. Ota, et al., "Novel Locally Strained Channel Technique for high Performance 55nm CMOS", International Electron Devices Meeting, 2.2.1, IEEE, February 2002.										
EXAMINER			DATE CONSIDERED								
XAMINER: Ini	tial if reference conside	ered, whether or	not cita	ition is in conformance wi	th MPFP 6	00 Draw line	hrough o	itation if			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.